Journal of Comparative Physiology

Volume 130 1979

A · Sensory, Neural, and Behavioral Physiology

Editorial Board

H. Autrum, München
R. R. Capranica, Ithaca, NY
K. von Frisch, München
G. A. Horridge, Canberra City
M. Lindauer, Würzburg
C. L. Prosser, Urbana, IL

Advisory Board

H. Atwood, Toronto
S. Daan, Haren
W. H. Fahrenbach, Beaverton, OR
B. Hölldobler, Cambridge, MA
Y. Katsuki, Okazaki
M. Konishi, Pasadena, CA
M. F. Land, Brighton
M. S. Laverack, St. Andrews
H. C. Lüttgau, Bochum
H. Markl, Konstanz
D. Ottoson, Stockholm
F. Papi, Pisa
C. S. Pittendrigh, Stanford, CA
W. Precht, Frankfurt
J. D. Pye, London
A. Roth, München
H. F. Rowell, Berkeley, CA
D. G. Stavenga, Groningen
R. Wehner, Zürich
J. J. Wine, Stanford, CA

B · Biochemical, Systemic, and Environmental Physiology

Editorial Board

K. Johansen, Aarhus
B. Linzen, München
W. T. W. Potts, Lancaster
C. L. Prosser, Urbana, IL

Advisory Board

G. A. Bartholomew, Los Angeles, CA
H. Bern, Berkeley, CA
P. J. Butler, Birmingham
Th. Eisner, Ithaca, NY
D. H. Evans, Coral Gables, FL
S. Nilsson, Göteborg
D. Randall, Vancouver, B.C.
R. B. Reeves, Buffalo, NY
G. H. Satchell, Dunedin
T. J. Shuttleworth, Exeter
G. Somero, La Jolla, CA
K. Urich, Mainz
S. Utida, Kagoshima
G. R. Wyatt, Kingston, Ontario
E. Zebe, Münster

Springer International

Journal of Comparative Physiology

A · Sensory, Neural, and Behavioral Physiology
B · Biochemical, Systemic, and Environmental Physiology

Founded in 1924 by K. von Frisch and A. Kühn, Volumes 1–29 (1934) under the title "Zeitschrift für wissenschaftliche Biologie, Abt. C: Zeitschrift für vergleichende Physiologie". Volumes 30–76 (1972) published as "Zeitschrift für vergleichende Physiologie". Volumes 77–92 (1974) published under the title "Journal of Comparative Physiology". Beginning with Volume 93 (1974) called "Journal of Comparative Physiology A · Sensory, Neural, and Behavioral Physiology B · Metabolic and Transport Functions". Beginning with Volume 123 (1978) Section B called "Biochemical, Systemic, and Environmental Physiology".

Copyright

It is a fundamental condition that submitted manuscripts have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature, and translations.

Photographic reproduction, microform, or any other reproduction of text, figures, or tables from this journal is prohibited without permission obtained from the publisher.

Special Regulations for the USA

The Article Fee Code on the first page of an article in this journal indicates the copyright owner's consent that in the USA copies may be made for personal or internal use, provided the stated fee for copying beyond that permitted by Section 107 or 108 of the United States Copyright Law is paid through the Copyright Clearance Center, Inc.

If a code does not appear, copies of the article may be made without charge, provided permission is obtained from the publisher.

The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

The use of general descriptive names, trade names, trade marks, etc., in this publication, even if the former are not specifically identified, is not to be taken as a sign that such names are exempt from the relevant protective laws and regulations and may accordingly be used freely by anyone.

Alle Rechte, einschließlich das der Übersetzung in fremde Sprachen und das der fotomechanischen Wiedergabe oder einer sonstigen Vervielfältigung, auch in Mikroform, vorbehalten. Jedoch wird gewerblichen Unternehmen für den innerbetrieblichen Gebrauch nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels e. V. und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens die Anfertigung einer fototechnischen Vervielfältigung gestattet. Wenn für diese Zeitschrift kein Pauschalabkommen mit dem Verlag vereinbart worden ist, ist eine Wertmarke im Betrage von DM 0,40 pro Seite zu verwenden.

Springer-Verlag Berlin Heidelberg New York
Printers: Universitätsdruckerei H. Stürtz AG, Würzburg
Printed in Germany – © by Springer-Verlag Berlin Heidelberg 1979

Springer-Verlag
Journal Production Dept. I
Postfach 105280
D-6900 Heidelberg 1
Telephone (06221) 487332
Telex 04-61690

Springer-Verlag
Heidelberger Platz 3
D-1000 Berlin 33
Telephone (030) 822001
Telex 01-83319

Springer-Verlag New York Inc.
175 Fifth Avenue
New York, NY 10010, USA
Telephone (212) 477-8200
Telex 0023232235

Contents

(A)=Section A · Sensory, Neural, and Behavioral Physiology; (B)=Section B · Biochemical, Systemic, and Environmental Physiology

Ache, B.W., Fuzessery, Z.M.: Chemosensory Integration in the Spiny Lobster: Ascending Activity in the Olfactory-Globular Tract (A) 63
Andersen, S.O., s. Waite, J.H., et al. (B) 301
Anderson, A.M.: Visual Scanning in the Honey Bee (A) . . 173
Audesirk, G.J., s. Audesirk, T.E. (A) 79
Audesirk, T.E.: Oral Mechanoreceptors in *Tritonia diomedea*. I. Electrophysiological Properties and Location of Receptive Fields (A) 71
Audesirk, T.E., Audesirk, G.J.: Oral Mechanoreceptors in *Tritonia diomedea*. II. Role in Feeding (A) 79
Bartholomew, G.A., s. Kenagy, G.J. (A) 131
Boyan, G.S.: Directional Responses to Sound in the Central Nervous System of the Cricket *Teleogryllus commodus* (Orthoptera: Gryllidae). I. Ascending Interneurons (A) . 137
Boyan, G.S.: Directional Responses to Sound in the Central Nervous System of the Cricket *Teleogryllus commodus* (Orthoptera: Gryllidae). II. A Descending Interneuron (A) 151
Bückmann, D.: Morphological Colour Change (2): The Effects of Total and Partial Blinding on Epidermal Ommochrome Content in the Stick Insect, *Carausius morosus* Br. (B) 331
Burton, F.A., s. Land, M. F., et al. (A) 49
Clarac, F., s. Vedel, J.P. (A) 251
Clark, J.V.: The Neuronal Basis of Rhythmic Pumping in *Balanus hameri* (A) 183
Colin, D.A., Kirsch, R., Leray, C.: Haemodynamic Effects of Adenosine on Gills of the Trout (*Salmo gairdneri*) (B) 325
Crowe, A., s. Valk-Fai, T. (A) 241
Daley, D.L., s. Delcomyn, F. (A) 39
Delcomyn, F., Daley, D.L.: Central Excitation of Cockroach Giant Interneurons During Walking (A) 39
Dudai, Y.: Behavioral Plasticity in a *Drosophila* Mutant, *dunce*^{DB276} (A) 271
Ewing, A.W.: The Neuromuscular Basis of Courtship Song in *Drosophila*: The Role of the Direct and Axillary Wing Muscles (A) 87
Fischbach, K.F.: Simultaneous and Successive Colour Contrast Expressed in "Slow" Phototactic Behaviour of Walking *Drosophila melanogaster* (A) 161
Fleissner, G., s. Schliwa, M. (A) 265
Fuzessery, Z.M., s. Ache, B.W. (A) 63
Gentle, M.J.: Single Unit Responses from the Solitary Complex Following Oral Stimulation in the Chicken (A) . . 259
Goldsmith, K.M., s. Goldsmith, T.H. (A) 209
Goldsmith, T.H., Goldsmith, K.M.: Discrimination of Colors by the Black-Chinned Hummingbird, *Archilochus alexandri* (A) 209
Gooch, V.D., s. Taylor, W., et al. (B) 355
Hartwig, H.G., Veen, T. van: Spectral Characteristics of Visible Radiation Penetrating into the Brain and Stimulating Extraretinal Photoreceptors. Transmission Recordings in Vertebrates (A) 277
Hastings, J.W., s. Taylor, W. (B) 359
Hastings, J.W., s. Taylor, W., et al. (B) 355
Heisenberg, M., Wolf, R.: On the Fine Structure of Yaw Torque in Visual Flight Orientation of *Drosophila melanogaster* (A) 113
Hermann, A.: Generation of a Fixed Motor Pattern. I. Details of Synaptic Interconnections of Pyloric Neurons in the Stomatogastric Ganglion of the Crab, *Cancer pagurus* (A) 221
Hermann, A.: Generation of a Fixed Motor Pattern. II. Electrical Properties and Synaptic Characteristics of Pyloric Neurons in the Stomatogastric Ganglion of the Crab, *Cancer pagurus* (A) 229
Hisada, M., s. Takahata, M. (A) 201
Hoffmann, K.H., Mustafa, T., Jorgensen, J.B.: Role of Pyruvate Kinase, Phosphoenolpyruvate Carboxykinase, Malic Enzyme and Lactate Dehydrogenase in Anaerobic Energy Metabolism of *Tubifex* spec. (B) 337
Hubl, L., Schneider, H.: Temperature and Auditory Thresholds: Bioacoustic Studies of the Frogs *Rana r. ridibunda, Hyla a. arborea* and *Hyla a. savignyi* (Anura, Amphibia) (A) 17
Janse, C., Sandeman, D.C.: The Rôle of the Fluid-Filled Balance Organs in the Induction of Phase and Gain in the Compensatory Eye Reflex of the Crab *Scylla serrata* (A) 95
Janse, C., Sandeman, D.C.: The Significance of Canal-Receptor Properties for the Induction of Phase and Gain in the Fluid-Filled Balance Organs of the Crab *Scylla serrata* (A) 101
Jorgensen, J.B., s. Hoffmann, K.H., et al. (B) 337
Johansen, K., Lykkeboe, G.: Thermal Acclimation of Aerobic Metabolism and O_2-Hb Binding in the Snake, *Vipera berus* (B) 293
Kammer, A.E., Kinnamon, S.C.: Maturation of the Flight Motor Pattern Without Movement in *Manduca sexta* (A) 29
Keller, R., Schmid, E.: In Vitro Secretion of Ecdysteroids by Y-Organs and Lack of Secretion by Mandibular Organs of the Crayfish Following Molt Induction (B) . . . 347
Kenagy, G.J., Bartholomew, G.A.: Effects of Day Length and Endogenous Control on the Annual Reproductive Cycle of the Antelope Ground Squirrel, *Ammospermophilus leucurus* (A) 131
Kinnamon, S.C., s. Kammer, A.E. (A) 29
Kirsch, R., s. Colin, D.A., et al. (B) 325
Land, M.F., Burton, F.A., Meyer-Rochow, V.B.: The Optical Geometry of Euphausiid Eyes (A) 49
Leray, C., s. Colin, D.A., et al. (B) 325
Linzen, B., s. Markl, J., et al. (B) 283
Lykkeboe, G., s. Johansen, K. (B) 293
Markl, A., s. Markl, J., et al. (B) 283
Markl, J., Markl, A., Schartau, W., Linzen, B.: Subunit Heterogeneity in Arthropod Hemocyanins: I. Chelicerata (B) 283
Meyer-Rochow, V.B., s. Land, M.F., et al. (A) 49
Mohneke, R., Schneider, H.: Effect of Temperature upon Auditory Thresholds in Two Anuran Species, *Bombina v. variegata* and *Alytes o. obstetricans* (Amphibia, Discoglossidae) (A) 9
Mustafa, T., s. Hoffmann, K.H., et al. (B) 337
Poole, C.A., Satchell, G.H.: Nociceptors in the Gills of the Dogfish *Squalus acanthias* (A) 1
Saleuddin, A.S.M., s. Waite, J.H., et al. (B) 301
Sandeman, D.C., s. Janse, C. (A) 95, 101
Satchell, G.H., s. Poole, C.A. (A) 1
Schartau, W., s. Markl, J., et al. (B) 283
Schliwa, M., Fleissner, G.: Arhabdomeric Cells of the Median Eye Retina of Scorpions. I. Fine Structural Analysis (A) 265
Schmid, E., s. Keller, R. (B) 347
Schneider, H., s. Hubl, L. (A) 17
Schneider, H., s. Mohneke, R. (A) 9

Sugawara, T.: Stretch Reception in the Bursa Copulatrix of the Butterfly, *Pieris rapae crucivora,* and Its Role in Behaviour (A) 191
Takahata, M., Hisada, M.: Functional Polarization of Statocyst Receptors in the Crayfish *Procambarus clarkii* Girard (A) 201
Taylor, E.W., Wheatly, M.G.: The Behaviour and Respiratory Physiology of the Shore Crab, *Carcinus maenas* (L.) at Moderately High Temperatures (B) 309
Taylor, W., Gooch, V.D., Hastings, J.W.: Period Shortening and Phase Shifting Effects of Ethanol on the *Gonyaulax* Glow Rhythm (B) 355
Taylor, W., Hastings, J.W.: Aldehydes Phase Shift the *Gomyaulax* Clock (B) 359
Underwood, H.: Melatonin Affects Circadian Rhythmicity in Lizards (B) 317
Valk-Fai, T., Crowe, A.: Further Analyses of Reflex Movements in the Hind Limbs of the Terrapin, *Pseudemys scripta elegans* (A) 241
Vedel, J.P., Clarac, F.: Combined Reflex Actions by Several Proprioceptive Inputs in the Rock Lobster Walking Legs (A) 251
Veen, T. van, s. Hartwig, H.G. (A) 277
Waite, J.H., Saleuddin, A.S.M., Andersen, S.O.: Periostracin – A Soluble Percursor of Sclerotized Periostracum in *Mytilus edulis* L. (B) 301
Wheatly, M.G., s. Taylor, E.W. (B) 309
Wolf, R., s. Heisenberg, M. (A) 113

Indexed in Currents Contents